

U.S. DEPARTMENT OF LABOR  
Occupational Safety and Health Administration

Form Approved  
OMB No. 44-R1387

# MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,  
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

DPM 151

## SECTION I

<b>LIQUID CARBONIC CORPORATION</b>		EMERGENCY TELEPHONE NO.
ADDRESS (NUMBER, STREET, CITY, STATE, AND ZIP CODE)		
CHEMICAL NAME AND SYNONYMS <u>Carbon Dioxide, Liquid</u>	TRADE NAME AND SYNONYMS <u>Carbon Dioxide, Liquiflow</u>	
CHEMICAL FAMILY <u>Carbon Compounds</u>	FORMULA <u>CO<sub>2</sub></u>	

## SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

## SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	@ 285 psig	0°F	SPECIFIC GRAVITY (H <sub>2</sub> O=1)	@ 2°F	1.014
VAPOR PRESSURE (mm Hg.)	@ 0°F	14,739	PERCENT, VOLATILE BY VOLUME (%)		100
VAPOR DENSITY (AIR=1)	@ 32°F	1.5290	EVAPORATION RATE	(=1) Instantaneous	
SOLUBILITY IN WATER	@ 32°F	180cc/100g H <sub>2</sub> O	(see Section VII)		
APPEARANCE AND ODOR	Clear liquid, slight pungent odor				

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	None	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA				
SPECIAL FIRE FIGHTING PROCEDURES				
UNUSUAL FIRE AND EXPLOSION HAZARDS				
Heat from a fire may actuate pressure relief valve in storage tank, releasing CO <sub>2</sub>				

SECTION V - HEALTH HAZARD DATA	
THRESHOLD LIMIT VALUE (Vaporized) (ACGIH 1980) 5000ppm	
EFFECTS OF OVEREXPOSURE Liquid released to atmosphere turns to solid CO <sub>2</sub> (which may freeze skin) and gaseous CO <sub>2</sub> (at 2 to 3%, symptoms of simple asphyxia occur)	
EMERGENCY AND FIRST AID PROCEDURES Solid CO <sub>2</sub> - treat for frostbite Gaseous CO <sub>2</sub> - remove from exposure. Recovery is rapid.	

SECTION VI - REACTIVITY DATA			
STABILITY	UNSTABLE		CONDITIONS TO AVOID Do not put liquid CO <sub>2</sub> in a low pressure tank or one without relief valve
	STABLE	X	
INCOMPATIBILITY (MATERIALS TO AVOID) None			
HAZARDOUS DECOMPOSITION PRODUCTS CO <sub>2</sub> vapor (a simple asphyxiant)			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Liquid released from tank turns to solid and gaseous CO <sub>2</sub> . avoid contact of solid with skin due to temperature (-109.4°F)	
WASTE DISPOSAL METHOD Blow to atmosphere	

SECTION VIII - SPECIAL PROTECTION INFORMATION		
RESPIRATORY PROTECTION (SPECIFY TYPE) None		
VENTILATION	LOCAL EXHAUST X	SPECIAL
	MECHANICAL (GENERAL)	OTHER
PROTECTIVE GLOVES Yes		EYE PROTECTION No
OTHER PROTECTIVE EQUIPMENT		

SECTION IX - SPECIAL PRECAUTIONS	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Avoid direct contact with skin	
OTHER PRECAUTIONS	

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